AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the present application.

IN THE CLAIMS:

Claims 1-12. (Canceled).

Claim 13. (Currently Amended) A method for producing a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4, comprising:

culturing a transformant comprising an expression vector comprising a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding a polypeptide comprising SEQ ID NO: 2, wherein said polypeptide has an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

(b) a nucleotide sequence encoding a polypeptide resulting from at least one of deletion, addition, insertion, or substitution of one to 10 amino acid residues

in SEQ ID NO: 2 or a partial sequence thereof, or a polypeptide comprising the polypeptide described above, wherein any of the polypeptides has an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

(c) a nucleotide sequence comprising SEQ ID NO: 1 or a partial sequence thereof comprising at least SEQ ID NO: 3, SEQ ID NO: 5, or SEQ ID NO: 7, wherein the nucleotide sequence encodes a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

(d) a nucleotide sequence resulting from at least one of deletion, addition, insertion, or substitution of one to 10 bases in a DNA comprising SEQ ID NO: 1 or a partial sequence thereof, or a nucleotide sequence comprising the nucleotide sequence, wherein any of the nucleotide sequences encodes a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane

fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4; and

(e) a nucleotide sequence capable of hybridizing under stringent conditions of 42°C, 5 x SSPE, 50% formamide, 1 x Denhardt's reagent, 10% dextran disodium sulfate, and 0.1% SDS with the complementary nucleotide sequence of any one of (a) to (d) above, and encoding a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

under conditions wherein the transformant is capable of expressing the expression vector.

Claims 14-15. (Canceled).

Claim 16. (Currently Amended) A recombinant cell expressing ~~comprising~~ a human CD4 protein and a polypeptide that is encoded by a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding a polypeptide comprising SEQ ID NO: 2, wherein said polypeptide has an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-

tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

(b) a nucleotide sequence encoding a polypeptide resulting from at least one of deletion, addition, insertion, or substitution of one to 10 amino acid residues in SEQ ID NO: 2 or a partial sequence thereof, or a polypeptide comprising the polypeptide described above, wherein any of the polypeptides has an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

(c) a nucleotide sequence comprising SEQ ID NO: 1 or a partial sequence thereof comprising at least ~~SEQ ID NO: 3,~~ SEQ ID NO: 5~~, or SEQ ID NO: 7~~, wherein the nucleotide sequence encodes a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

(d) a nucleotide sequence resulting from at least one of deletion, addition, insertion, or substitution of one to 10 bases in a DNA comprising SEQ ID NO: 1 or a partial sequence thereof, or a nucleotide sequence comprising the

nucleotide sequence, wherein any of the nucleotide sequences encodes a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4; and

(e) a nucleotide sequence capable of hybridizing under stringent conditions of 42°C, 5 x SSPE, 50% formamide, 1 x Denhardt's reagent, 10% dextran disodium sulfate, and 0.1% SDS with the complementary nucleotide sequence of any one of (a) to (d) above, and encoding a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

and wherein said recombinant cell is infected with T-cell-line-tropic HIV-1 ~~HIV~~ when contacted therewith.

Claims 17-21. (Canceled).

Claim 22. (Currently Amended) A kit for detecting a T-cell-line-tropic HIV-1 infection, comprising recombinant cells expressing heterologous hCD4 and mCXCR-4, wherein said mCXCR-4 is

encoded by a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding a polypeptide comprising SEQ ID NO: 2, wherein said polypeptide has an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

(b) a nucleotide sequence encoding a polypeptide resulting from at least one of deletion, addition, insertion, or substitution of one to 10 amino acid residues in SEQ ID NO: 2 or a partial sequence thereof, or a polypeptide comprising the polypeptide described above, wherein any of the polypeptides has an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

(c) a nucleotide sequence comprising SEQ ID NO: 1 or a partial sequence thereof comprising at least SEQ ID NO: 3, SEQ ID NO: 5, or SEQ ID NO: 7, wherein the nucleotide sequence encodes a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

(d) a nucleotide sequence resulting from at least one of deletion, addition, insertion, or substitution of one to 10 bases in a DNA comprising SEQ ID NO: 1 or a partial sequence thereof, or a nucleotide sequence comprising the nucleotide sequence, wherein any of the nucleotide sequences encodes a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4; and

(e) a nucleotide sequence capable of hybridizing under stringent conditions of 42°C, 5 x SSPE, 50% formamide, 1 x Denhardt's reagent, 10% dextran disodium sulfate, and 0.1% SDS with the complementary nucleotide sequence of any one of (a) to (d) above, and encoding a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4.

Claim 23. (Canceled).

Claim 24. (Currently Amended) The method according to claim 13, wherein said partial sequence comprises the ~~a~~ nucleotide

sequence of ~~selected from the group consisting of: SEQ ID NO: 3,~~ SEQ ID NO: 5~~, and SEQ ID NO: 7~~.

Claim 25. (Currently Amended) The recombinant cell according to claim 16, wherein said partial sequence comprises the ~~a~~ nucleotide sequence of ~~selected from the group consisting of: SEQ ID NO: 3,~~ SEQ ID NO: 5~~, and SEQ ID NO: 7~~.

Claim 26. (Currently Amended) The kit according to claim 22, wherein said partial sequence comprises the ~~a~~ nucleotide sequence of ~~selected from the group consisting of: SEQ ID NO: 3,~~ SEQ ID NO: 5~~, and SEQ ID NO: 7~~.

Claim 27. (Currently Amended) The method according to claim 13, wherein said nucleotide sequence is selected from the group consisting of: SEQ ID NO: 1~~, SEQ ID NO: 3,~~ and SEQ ID NO: 5~~, and SEQ ID NO: 7~~.

Claim 28. (Previously Presented) The method according to claim 13, wherein said polypeptide comprises SEQ ID NO: 2.

Claim 29. (Currently Amended) The recombinant cell according to claim 16, wherein said nucleotide sequence is selected from

the group consisting of: SEQ ID NO: 1~~, SEQ ID NO: 3,~~ and SEQ ID NO: 5~~, and SEQ ID NO: 7~~.

Claim 30. (Previously Presented) The recombinant cell according to claim 16, wherein said polypeptide comprises SEQ ID NO: 2.

Claim 31. (Previously Presented) The recombinant cell according to claim 16, wherein said recombinant cell is derived from a cell line selected from the group consisting of: a Chinese hamster ovary cell line, a human colon cancer cell line, SW480 cells, a human osteoblastsarcoma cell line, HOS cells, a human glioblastoma cell line, and U87MG cells.

Claim 32. (Currently Amended) The kit according to claim 22, wherein said nucleotide sequence is selected from the group consisting of: SEQ ID NO: 1~~, SEQ ID NO: 3,~~ and SEQ ID NO: 5~~, and SEQ ID NO: 7~~.

Claim 33. (Previously Presented) The kit according to claim 22, wherein said polypeptide comprises SEQ ID NO: 2.

Claim 34. (Previously Presented) The kit according to claim 22, wherein said HIV-1 infection is a strain NL432 or strain IIIb infection.

Claim 35. (Currently Amended) The method according to claim 13, wherein said polypeptide supports cell membrane fusion mediated by a T-cell-line-tropic HIV-1 env and infection with a T-cell-line-tropic HIV-1 in the presence of human CD4.